DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jordan Becker (39,602) on March 22, 2010.

2. The application has been amended as follows:

Claim 1: A caching device to operate as an intermediary node on a network, the device comprising: a cache to store content requestable by a client on the network; a user interface to enable a user to specify a set of forwarding rules for forwarding requests on the network; a database to store the set of forwarding rules; a request processing unit to receive a request from the client; a rule evaluator to evaluate the set of forwarding rules to identify within the set of forwarding rules a rule which applies to the request, such that the request processing unit attempts to forward the request to a destination selected according to said rule, wherein the rule indicates a host in a defined forwarding hierarchy; and a rule engine to determine an availability of the host indicated in said rule and, ~~if~~ when the host is available, to select the host as a forwarding destination and to cause the request processing unit to forward the request to the host according to said

rule, wherein the request processing unit is further to use a timeout period in attempting to establish a connection with the forwarding destination, the timeout period based on information indicative of a responsiveness of the forwarding destination, wherein the information indicative of the responsiveness of the forwarding destination comprises information indicative of a loading on, or a response time of, the forwarding destination, and wherein the timeout period is computed in response to the request being received, wherein, ~~if~~ when the request processor is unable to forward the request according to said rule, the rule evaluator resumes evaluating the set of forwarding rules to identify another rule corresponding to the request.

Claim 15: A device to operate as an intermediary node on a network, the device comprising: a processor; a network interface to allow the device to communicate on the network; and a storage facility to store program code for execution by the processor to cause the device to provide a user interface to enable a user to specify a set of forwarding rules, receive a request for content from a client, determine whether the content is cached locally in said device, and in response to a determination that the content is not cached locally in the device, evaluate the set of forwarding rules to identify a rule in the set of forwarding rules which should be applied to the request, determine an availability of a host indicated in said rule and select the host as a forwarding destination for the request ~~if~~ when the host is available, utilizing a timeout period in attempting to establish a connection with the forwarding destination, the

timeout period based on information indicative of a responsiveness of the forwarding destination, wherein the information indicative of the responsiveness of the forwarding destination comprises information indicative of a loading on, or a response time of, the forwarding destination, and wherein the timeout period is computed in response to the request being received, forward the request on the network according to said rule, and resume evaluating the set of forwarding rules to identify another rule corresponding to the request ~~if~~ when the device is unable to forward the request according to said rule.

Claim 23: An intermediary network node comprising: means for receiving a request for content on a network; means for determining a forwarding destination for the request in a defined forwarding hierarchy, by applying a set of user-specified forwarding rules to the request; means for determining an availability of a host indicated in said rule and selecting the host as a forwarding destination for the request ~~if~~ when the host is available, wherein the means for receiving the request is further to use a timeout period in attempting to establish a connection with the forwarding destination, the timeout period based on information indicative of a responsiveness of the forwarding destination, wherein the information indicative of the responsiveness of the forwarding destination comprises information indicative of a loading on, or a response time of, the forwarding destination, and wherein the timeout period is computed in response to the request being received; means for forwarding the request according to the determined forwarding destination; and means for resuming evaluation of the set of forwarding rules

to identify another rule corresponding to the request ~~if~~ when said forwarding the request is unsuccessful.

Claim 26: A caching device to operate within a cache hierarchy on a network, the caching device comprising: a cache to store content requestable by a client on the network; a request processing unit to receive a request for content from the client, and to forward the request on the network based on a set of forwarding rules in the event of a cache miss; a user interface to enable a user to specify the set of forwarding rules, such that the user may specify one or more forwarding rules to indicate a host in the cache hierarchy as a destination for a corresponding request; a database to store the set of forwarding rules; a rule evaluator to evaluate the set of forwarding rules in response to the cache miss, to identify a rule in the set of forwarding rules which applies to the request; and a rule engine to determine an availability of a host indicated in the rule, and to select the host as a forwarding destination for the request ~~if~~ when the host is available, wherein the request processing unit is further to use a timeout period in attempting to establish a connection with the forwarding destination, the timeout period based on information indicative of a responsiveness of the forwarding destination, wherein the information indicative of the responsiveness of the forwarding destination comprises information indicative of a loading on, or a response time of, the forwarding destination, and wherein the timeout period is computed in response to the request

being received, the rule engine further to indicate to the request processing unit ~~if~~ when the host is available to cause the request processing unit to forward the request to the host, wherein, ~~if~~ when the request processing unit is unable to forward the request according to said rule, the rule evaluator resumes evaluating the set of forwarding rules to identify another rule corresponding to the request.

Claim 32: A network caching device to operate within a defined cache hierarchy on a network, the caching device comprising: a cache to store content from an origin server on the network; an application to receive a request for content from a client via the network, and to forward the request on the network based on a set of forwarding rules in the event of a cache miss; a user interface to enable a user to specify and modify the set of forwarding rules; a rule encoder to encode into a uniform syntax forwarding rules specified by the user; a rules database to store the encoded forwarding rules; a rule evaluator to evaluate the set of forwarding rules sequentially in response to the cache miss, to identify a rule in the set of forwarding rules which applies to the request, by identifying a correspondence between a variable in the request and a variable in the rule, the rule specifying a host within the cache hierarchy as a forwarding destination for the request; and a rule engine to determine an availability of the host and to select the host as said forwarding destination for the request ~~if~~ when the host is available, the rule engine further to indicate the host to the application layer ~~if~~ when the host is available, wherein the application is further to use a timeout period in attempting to establish a connection with the forwarding destination, the timeout period based on information

indicative of a responsiveness of the forwarding destination, wherein the information indicative of the responsiveness of the forwarding destination comprises information indicative of a loading on, or a response time of, the forwarding destination, and wherein the timeout period is computed in response to the request being received, such that the application layer forwards the request to the host upon successfully establishing the connection, wherein ~~if~~ when the application layer is unable to forward the request according to the rule, the rule evaluator resumes evaluating the set of forwarding rules to identify another rule corresponding to the request.

Claim 37: A method of operating a caching device in a cache hierarchy on a network, the method comprising: caching content on the network; providing a user interface to enable a user to specify a set of forwarding rules; storing the set of forwarding rules; receiving a request from the client; evaluating the set of forwarding rules ~~if~~ when the request produces a cache miss, to identify a rule in the set of forwarding rules that applies to the request; determining an availability of a host indicated in the rule; attempting to establish a connection to the host ~~if~~ when the host is available, wherein a timeout period is utilized in attempting to establish a connection with the host, the timeout period based on information indicative of a responsiveness of the host, wherein the information indicative of the responsiveness of the forwarding destination comprises information indicative of a loading on, or a response time of, the forwarding destination, and wherein the timeout period is computed in response to the request being received,; forwarding the request to the host; and resuming said evaluating to identify another rule

having a correspondence to the request ~~if~~ when said attempting to establish the connection is unsuccessful.

Claim 49: A proxy cache to operate as an intermediary node on a network, the proxy cache comprising: a user interface to enable a user to specify a set of forwarding rules for forwarding requests on the network, wherein a rule in said set of forwarding rules can specify a plurality of destinations; a database to store the set of forwarding rules; a request processing unit to receive a request at the proxy cache from a client; a rule evaluator to evaluate the set of forwarding rules to identify a rule in the set of forwarding rules which applies to the request; and a rule engine to select a destination from among the plurality of destinations based on a delivery factor included in the rule, the delivery factor comprising one of: a specified distribution method for the request, an indication of a current load on one of the plurality of destinations, or a weighting of the plurality of destinations indicating a preferred distribution of forwarding requests between the plurality of destinations, the rule engine further to cause the request processing unit to forward the request to the destination ~~if~~ when the destination is available, wherein the request processing unit is further to use a timeout period in attempting to establish a connection with the forwarding destination, the timeout period based on information indicative of a responsiveness of the forwarding destination, wherein the information indicative of the responsiveness of the forwarding destination comprises information indicative of a loading on, or a response time of, the forwarding destination, and wherein the timeout period is computed in response to the request being received~~;~~.

Reasons for Allowance

3. Claims 1-4, 6, 8-19, 21-33, 37, 39-43, 49, 51, 52, 57, 59-63 and 65 are allowed.

4. The following is an examiner's statement for reasons for allowance: The prior art of record fails to teach the invention as claimed. For instance prior art further in light of the entire claim language was not found to teach "a rule engine to determine an availability of the host indicated in said rule and, ~~if~~ when the host is available, to select the host as a forwarding destination and to cause the request processing unit to forward the request to the host according to said rule, wherein the request processing unit is further to use a timeout period in attempting to establish a connection with the forwarding destination, the timeout period based on information indicative of a responsiveness of the forwarding destination, wherein the information indicative of the responsiveness of the forwarding destination comprises information indicative of a loading on, or a response time of, the forwarding destination, and wherein the timeout period is computed in response to the request being received, wherein, ~~if~~ when the request processor is unable to forward the request according to said rule, the rule evaluator resumes evaluating the set of forwarding rules to identify another rule corresponding to the request".

5. Dependent claims further limit the independent claims and are considered allowable on the same basis as the independent claims as well as for further limitations set forth. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASGHAR BILGRAMI whose telephone number is (571)272-3907. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia L.M. Dollinger can be reached on 571-272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. B./
Examiner, Art Unit 2443

/George C Neurauter, Jr./
Primary Examiner, Art Unit 2443